



MITSUBISHI

HOME REFRIGERATORS

2005

SERVICE MANUAL

NO.SM-RE-0502

Models	MR-385R-W-A	MR-385R-W-A(NZ)
	MR-385R-ST-A	MR-385R-ST-A(NZ)
	MR-420R-W-A	MR-420R-W-A(NZ)
	MR-420R-ST-A	MR-420R-ST-A(NZ)
	MR-455R-W-A	MR-455R-W-A(NZ)
	MR-455R-ST-A	MR-455R-ST-A(NZ)

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A.....Australia
A(NZ)New Zealand

1

SPECIFICATION

1.1 SPECIFICATION

MR-385R-A

MR-385R-A(NZ)

Power supply		230/240V 50Hz	
Total capacity (Gross (AS))	L	385 (F : 130 R : 255)	
Dimensions (HXWXD)	mm.	1591 x 685 x 700	
Cabinet		Acrylic resin coated steel	
Food liner		ABS resin	
Insulation	Cabinet	Foamed cyclopentane	
	Freezer door	Foamed cyclopentane	
	Refrigerator door	Foamed cyclopentane	
Cooling system	Freezer	Forced air convection	
	Refrigerator	Surround cooling,multi air flow,front air flow	
Evaporator		Fin and tube type	
Condenser		Concealed type	
Defrost system		Automatic (Heater defrost)	
Drain		Automatic (drainage)	
Temperature control system		Automatic control	
Refrigerator room light		240V 15W (E12)	
Accessories	Ice tray		1 pc.
	Ice box		1 pc.
	Freezer pocket		2 pcs.
	Slide chilled case		1 pc.
	Crystal shelf (F)		1 pc.
	Crystal shelf (R)		3 pcs.
	Free pocket		1 pc.
	Egg rack		2 pcs.
	Adjust pocket		2 pcs.
	Bottle pocket		2 pcs.
	Vegetable case		1 pc.
	Tray V		1 pc.
	Drain pan		1 pc.
Bottle stopper		1 pc.	
Weight	Unit	kg	65
	Shipping	kg	72

MR-420R-A
MR-420R-A(NZ)

Power supply		230/240V 50Hz	
Total capacity (Gross (AS))	L	420 (F : 130 R : 290)	
Dimensions (HXWXD)	mm.	1696 x 685 x 700	
Cabinet		Acrylic resin coated steel	
Food liner		ABS resin	
Insulation	Cabinet	Foamed cyclopentane	
	Freezer door	Foamed cyclopentane	
	Refrigerator door	Foamed cyclopentane	
Cooling system	Freezer	Forced air convection	
	Refrigerator	Surround cooling,multi air flow,front air flow	
Evaporator		Fin and tube type	
Condenser		Concealed type	
Defrost system		Automatic (Heater defrost)	
Drain		Automatic (drainage)	
Temperature control system		Automatic control	
Refrigerator room light		240V 15W (E12)	
Accessories	Ice tray	1 pc.	
	Ice box	1 pc.	
	Freezer pocket	2 pcs.	
	Slide chilled case	1 pc.	
	Crystal shelf (F)	1 pc.	
	Crystal shelf (R)	3 pcs.	
	Free pocket	1 pc.	
	Egg rack	2 pcs.	
	Adjust pocket	2 pcs.	
	Bottle pocket	2 pcs.	
	Vegetable case	1 pc.	
	Tray V	1 pc.	
	Drain pan	1 pc.	
Bottle stopper	1 pc.		
Weight	Unit	kg	69
	Shipping	kg	73

MR-455R-A
MR-455R-A(NZ)

Power supply		230/240V 50Hz	
Total capacity (Gross (AS))	L	454 (F : 130 R : 324)	
Dimensions (HXWxD)	mm.	1806 x 685 x 700	
Cabinet		Acrylic resin coated steel	
Food liner		ABS resin	
Insulation	Cabinet	Foamed cyclopentane	
	Freezer door	Foamed cyclopentane	
	Refrigerator door	Foamed cyclopentane	
Cooling system	Freezer	Forced air convection	
	Refrigerator	Surround cooling,multi air flow,front air flow	
Evaporator		Fin and tube type	
Condenser		Concealed type	
Defrost system		Automatic (Heater defrost)	
Drain		Automatic (drainage)	
Temperature control system		Automatic control	
Refrigerator room light		240V 15W (E12)	
Accessories	Ice tray	2 pcs.	
	Ice box	1 pc.	
	Freezer pocket	2 pcs.	
	Slide chilled case	1 pc.	
	Crystal shelf (F)	1 pc.	
	Crystal shelf (R)	4 pcs.	
	Free pocket	1 pc.	
	Egg rack	2 pcs.	
	Adjust pocket	3 pcs.	
	Bottle pocket	2 pcs.	
	Vegetable case	1 pc.	
	Tray V	1 pc.	
	Drain pan	1 pc.	
	Bottle stopper	1 pc.	
Weight	Unit	kg	73
	Shipping	kg	79

1.2 ELECTRICAL PARTS SPECIFICATION

MR-385R-A

MR-385R-A(NZ)

Compressor	Model		DG57C96RAW5	
	Power supply		220/240V 50Hz	
	Rated input	W	106/108(220/240V 50Hz)	
	Starting current	A	7.38/8.01(220/240V 50Hz)	
	Running current	A	0.57/0.55(220/240V 50Hz)	
	Winding resistance (T : 20 °C)		18.2 Ω(Main) / 17.7 Ω(Aux)	
PTC RELAY			PTH7M330MD2	
Motor protector	Model		5TM181NHBY	
	Ambient temperature	°C	25	
	Time	Sec.	16 MAX	
	Current	A	5.4	
Running capacitor			4μF 400VAC	
Capillary tube		mm.	∅ 1.8 X ∅ 0.7 X 2350	
Dehydrant Molecular sieve		g	10	
Refrigerant HFC. 134a		g	145	
Defrosting control	Defrosting timer		Control board	
	Defrost finish	°C	Thermister 14 ± 1.5	
	Thermal fuse	°C	73	
Heater	Defrost heater		384 Ω (240V 150W)	
Deodorition			Filter	
Fan motor	Model		UDVH15MA1H	
	Type		Single phase	
	Number of poles		2p	
	Input	W	Less than 10.2/12 (220/240V 50Hz)	
	Revolution	r.p.m	2520 ± 200 / 2580±200 (220/240V 50Hz)	

Temperature control	Model		Freezer		Refrigerator (MM1-6177)	
	Dial position		ON	OFF	OPEN	SHUT
	Warmer	°C	-13.7	-19.0	-	3.5
	Normal	°C	-16.9	-22.9	MAX 5.0	-1.0 ± 1.5
	Colder	°C	-20.4	-27.5	-	-12.5

MR-420R-A
MR-420R-A(NZ)

Compressor	Model		DG66C11RAW5			
	Power supply		220/240V 50Hz			
	Rated input	W	117/118(220/240V 50Hz)			
	Starting current	A	8.05/8.83(220/240V 50Hz)			
	Running current	A	0.71/0.66(220/240V 50Hz)			
	Winding resistance (T : 20 °C)		15.4 Ω(Main) / 17.7 Ω(Aux)			
PTC RELAY			PTH7M330MD2			
Motor protector	Model		5TM205NHBY			
	Ambient temperature	°C	25			
	Time	Sec.	16 MAX			
	Current	A	6.0			
Running capacitor			4μF 400VAC			
Capillary tube		mm.	∅ 1.8 X ∅ 0.7 X 2350			
Dehydrant Molecular sieve		g	10			
Refrigerant HFC. 134a		g	145			
Defrosting control	Defrosting timer		Control board			
	Defrost finish	°C	Thermister 14 ± 1.5			
	Thermal fuse	°C	73			
Heater	Defrost heater		384 Ω (240V 150W)			
Deodorition			Filter			
Fan motor	Model		UDVH15MA1H			
	Type		Single phase			
	Number of poles		2p			
	Input	W	Less than 10.2/12 (220/240V 50Hz)			
	Revolution	r.p.m	2520 ± 200 / 2580±200 (220/240V 50Hz)			

Temperature control	Model		Freezer		Refrigerator (MM1-6177)	
	Dial position		ON	OFF	OPEN	SHUT
	Warmer	°C	-13.7	-19.0	-	3.5
	Normal	°C	-16.9	-22.9	MAX 5.0	-1.0 ± 1.5
	Colder	°C	-20.4	-27.5	-	-12.5

MR-455R-A

MR-455R-A(NZ)

Compressor	Model		DD66C13RAW5			
	Power supply		220/240V 50Hz			
	Rated input	W	127/131(220/240V 50Hz)			
	Starting current	A	8.3/9.1(220/240V 50Hz)			
	Running current	A	0.63/0.61(220/240V 50Hz)			
	Winding resistance (T : 20 °C)		12 Ω(Main) / 28.7 Ω(Aux)			
PTC RELAY			PTH7M330MD2			
Motor protector	Model		5TM205NHBYY			
	Ambient temperature	°C	25			
	Time	Sec.	16 MAX			
	Current	A	6.0			
Running capacitor			4μF 400VAC			
Capillary tube		mm.	∅ 1.8 X ∅ 0.7 X 2350			
Dehydrant Molecular sieve		g	10			
Refrigerant HFC. 134a		g	145			
Defrosting control	Defrosting timer		Control board			
	Defrost finish	°C	Thermister 14 ± 1.5			
	Thermal fuse	°C	73			
Heater	Defrost heater		384 Ω (240V, 150W)			
Deodorition			Filter			
Fan motor	Model		UDVH15MA1H			
	Type		Single phase			
	Number of poles		2p			
	Input	W	Less than 10.2/12 (220/240V 50Hz)			
	Revolution		r.p.m	2520 ± 200 / 2580±200 (220/240V 50Hz)		

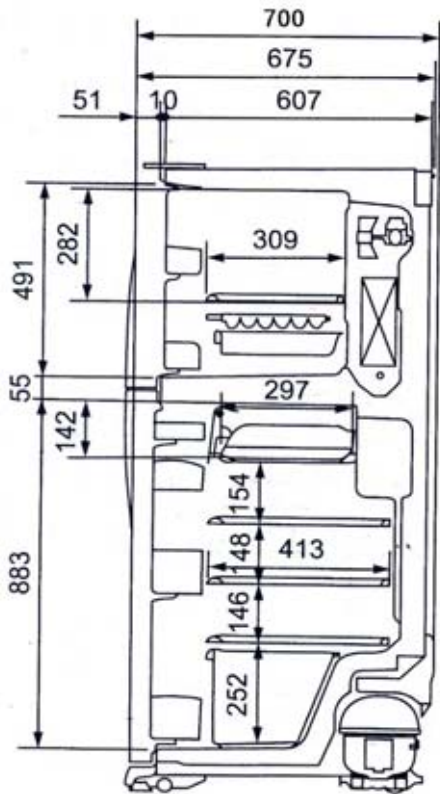
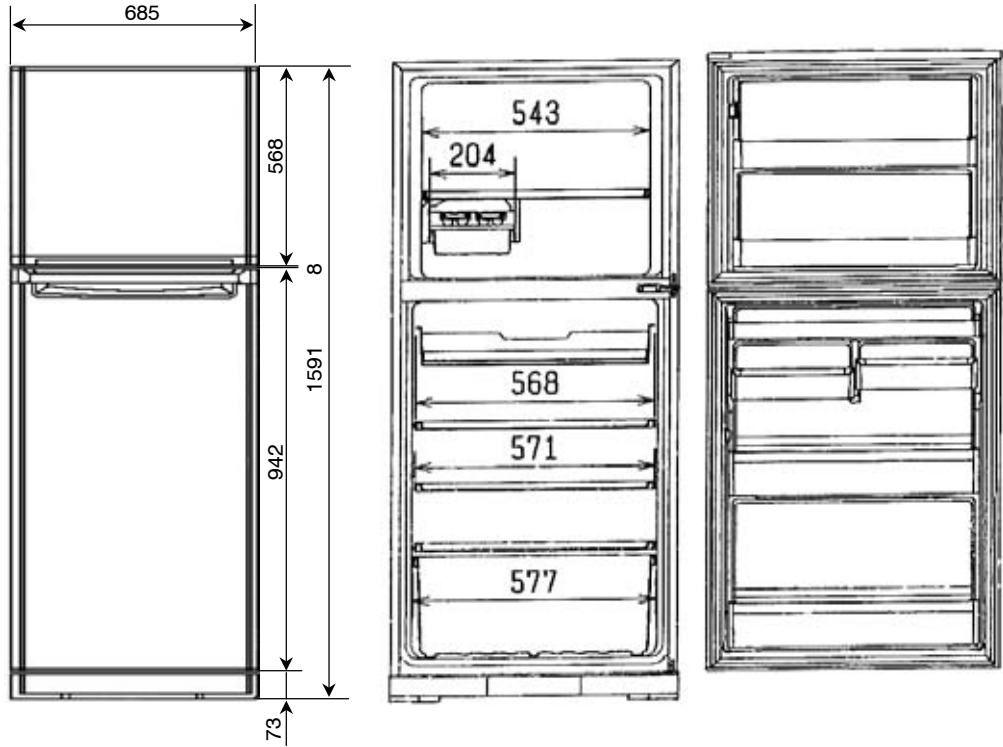
Temperature control	Model		Freezer		Refrigerator (MM1-6177)	
	Dial position		ON	OFF	OPEN	SHUT
	Warmer	°C	-13.7	-19.0	-	3.5
	Normal	°C	-16.9	-22.9	MAX 5.0	-1.0 ± 1.5
	Colder	°C	-20.4	-27.5	-	-12.5

2

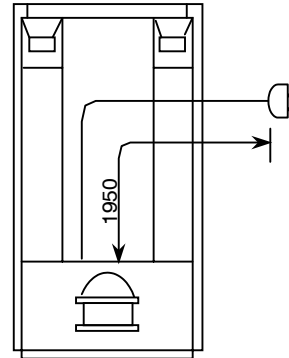
OUTLINES AND DIMENSIONS

Unit : mm

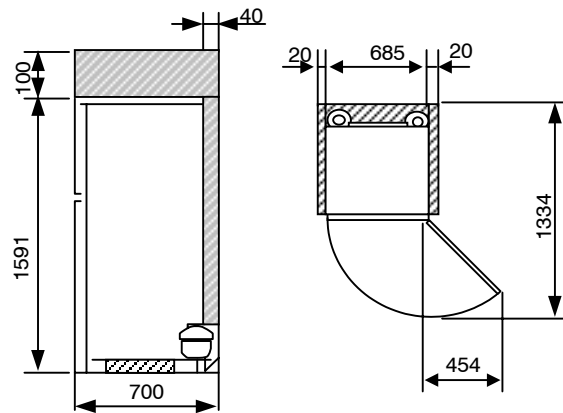
MR-385R-A
MR-385R-A(NZ)



PLUG CORD LENGTH

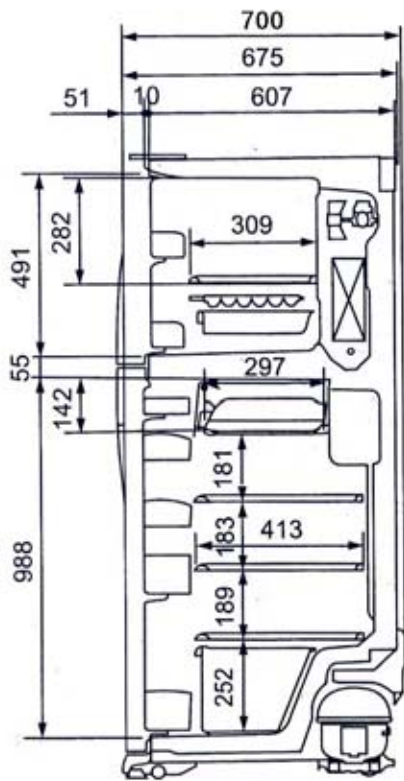
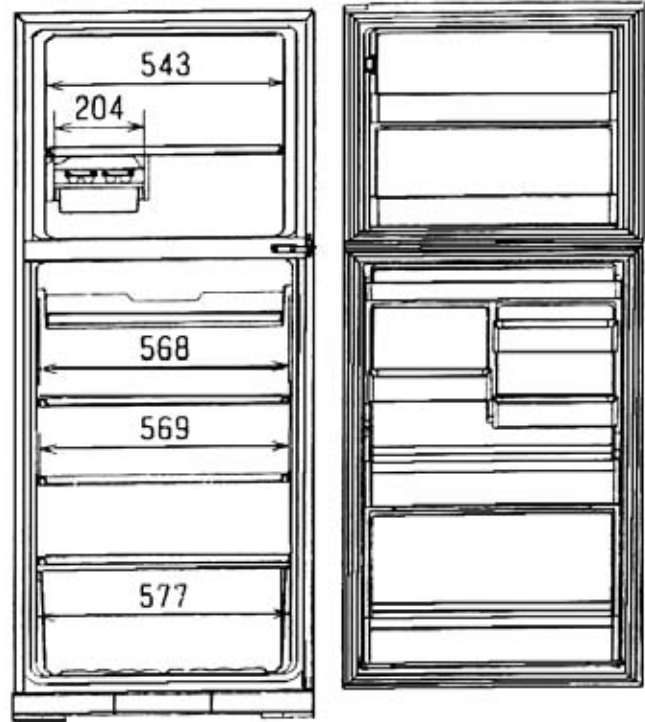
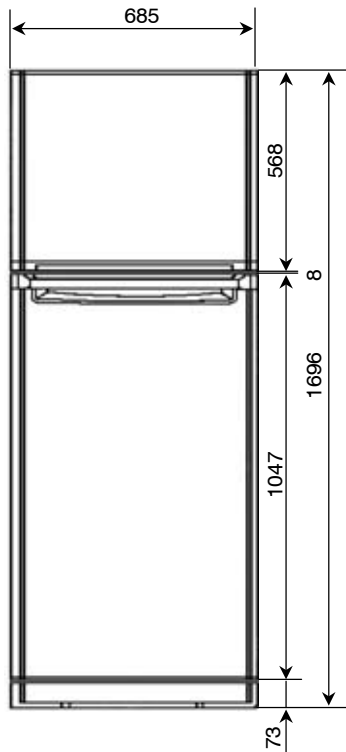


REQUIRED SPACE FOR INSTALLATION

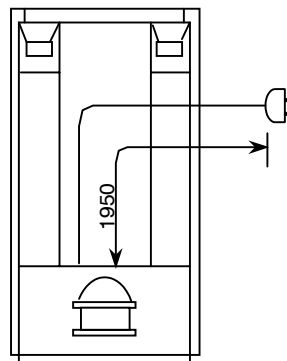


Unit : mm

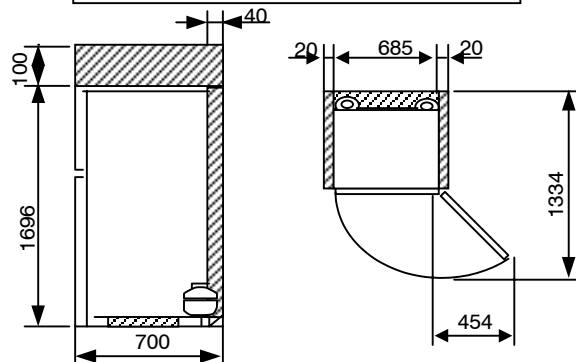
MR-420R-A
MR-420R-A(NZ)



PLUG CORD LENGTH

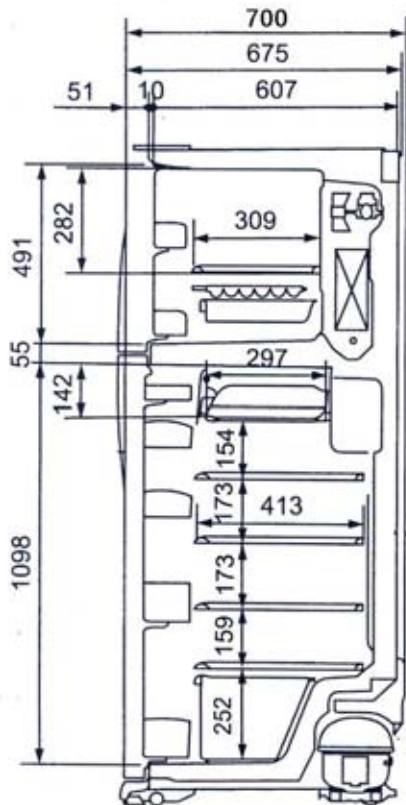
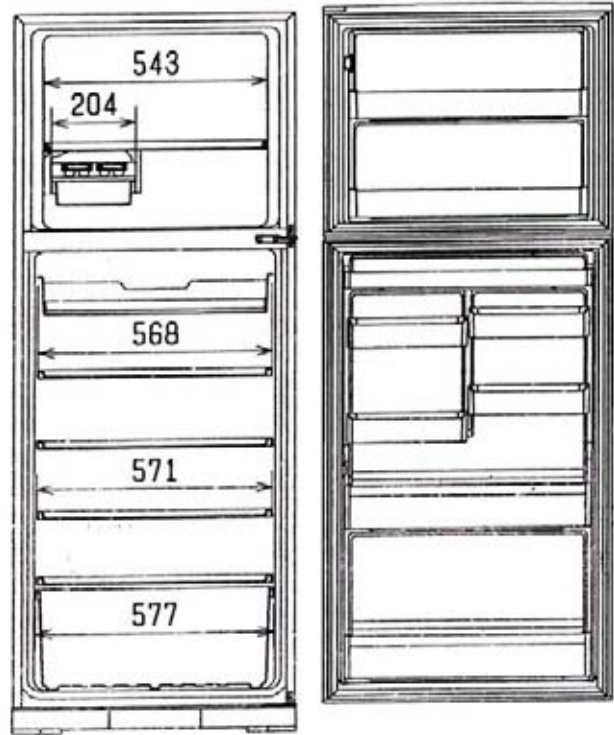
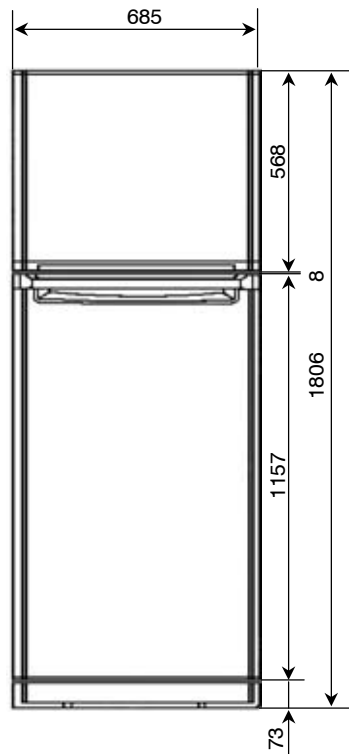


REQUIRED SPACE FOR INSTALLATION

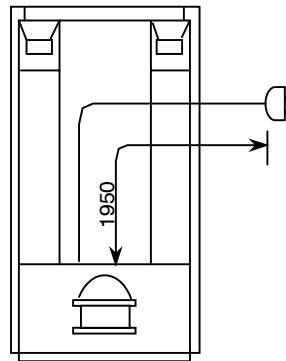


Unit : mm

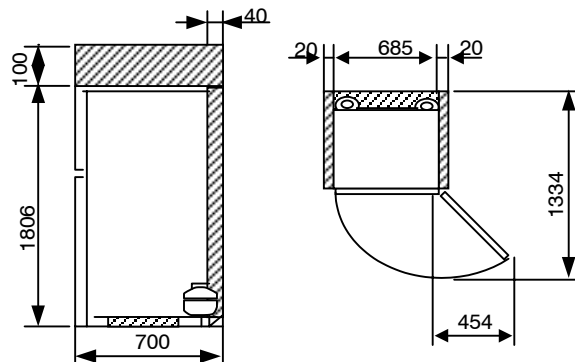
MR-455R-A
MR-455R-A(NZ)



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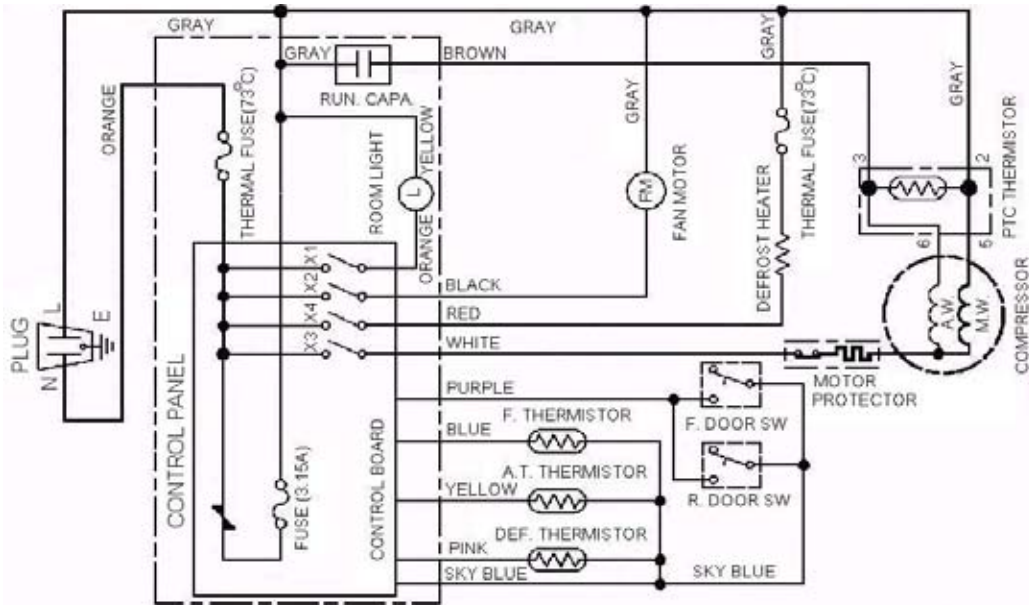


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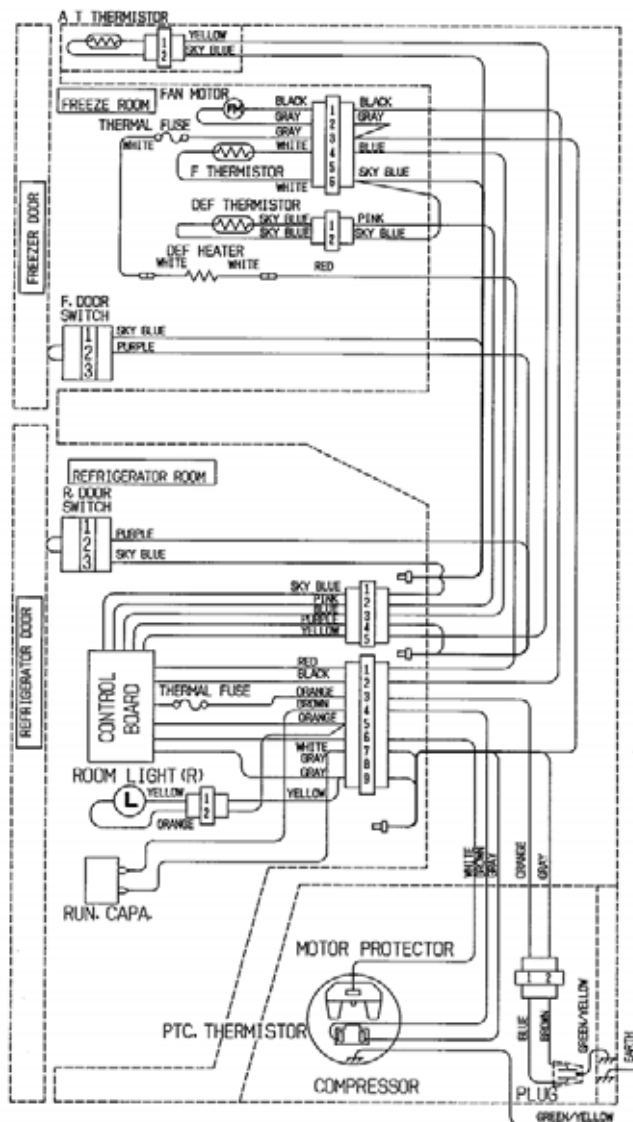


- MR-385R-A
- MR-385R-A(NZ)
- MR-420R-A
- MR-420R-A(NZ)
- MR-455R-A
- MR-455R-A(NZ)

(SKELETON WIRING DIAGRAM)



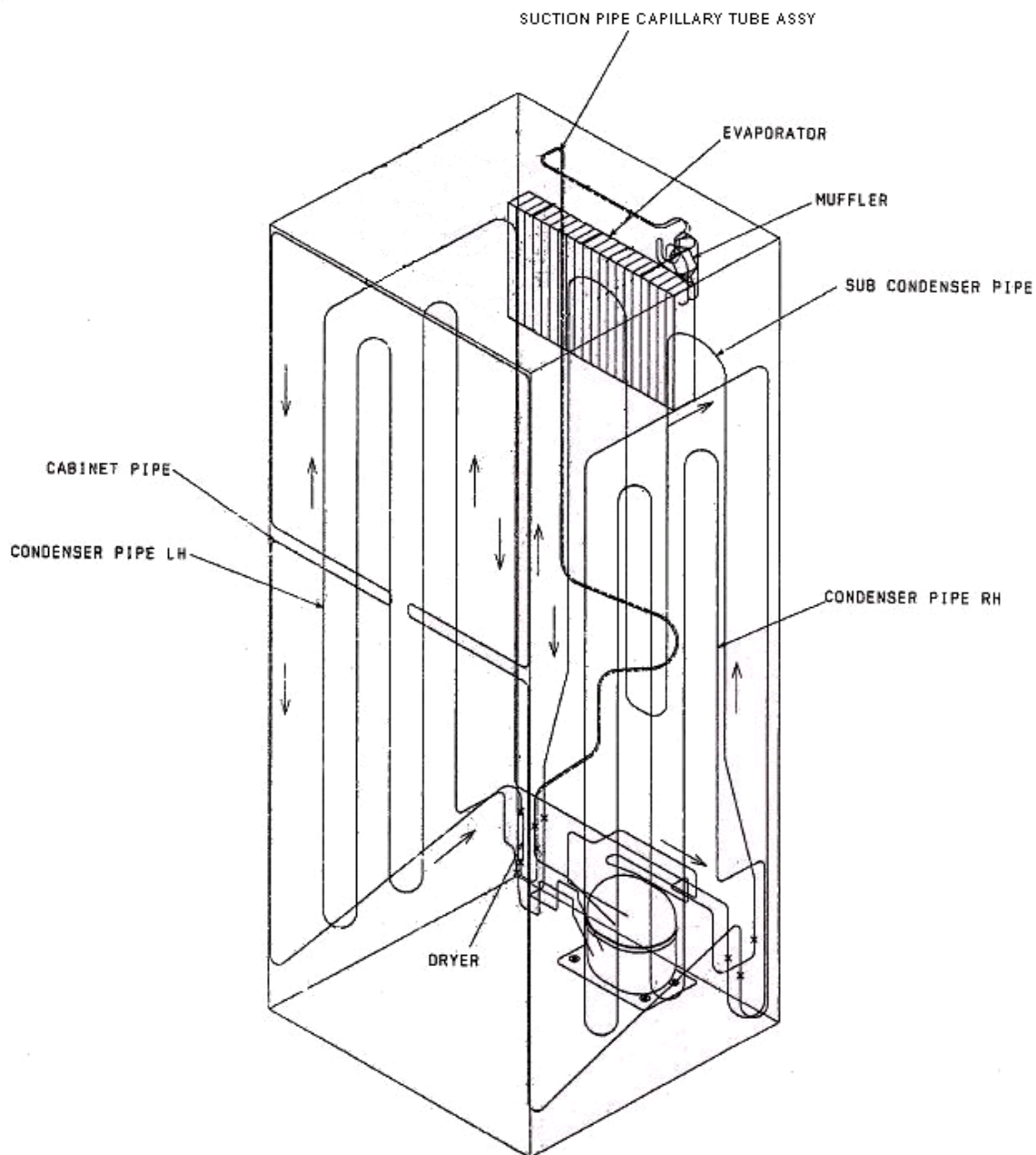
(ACTUAL WIRING DIAGRAM)



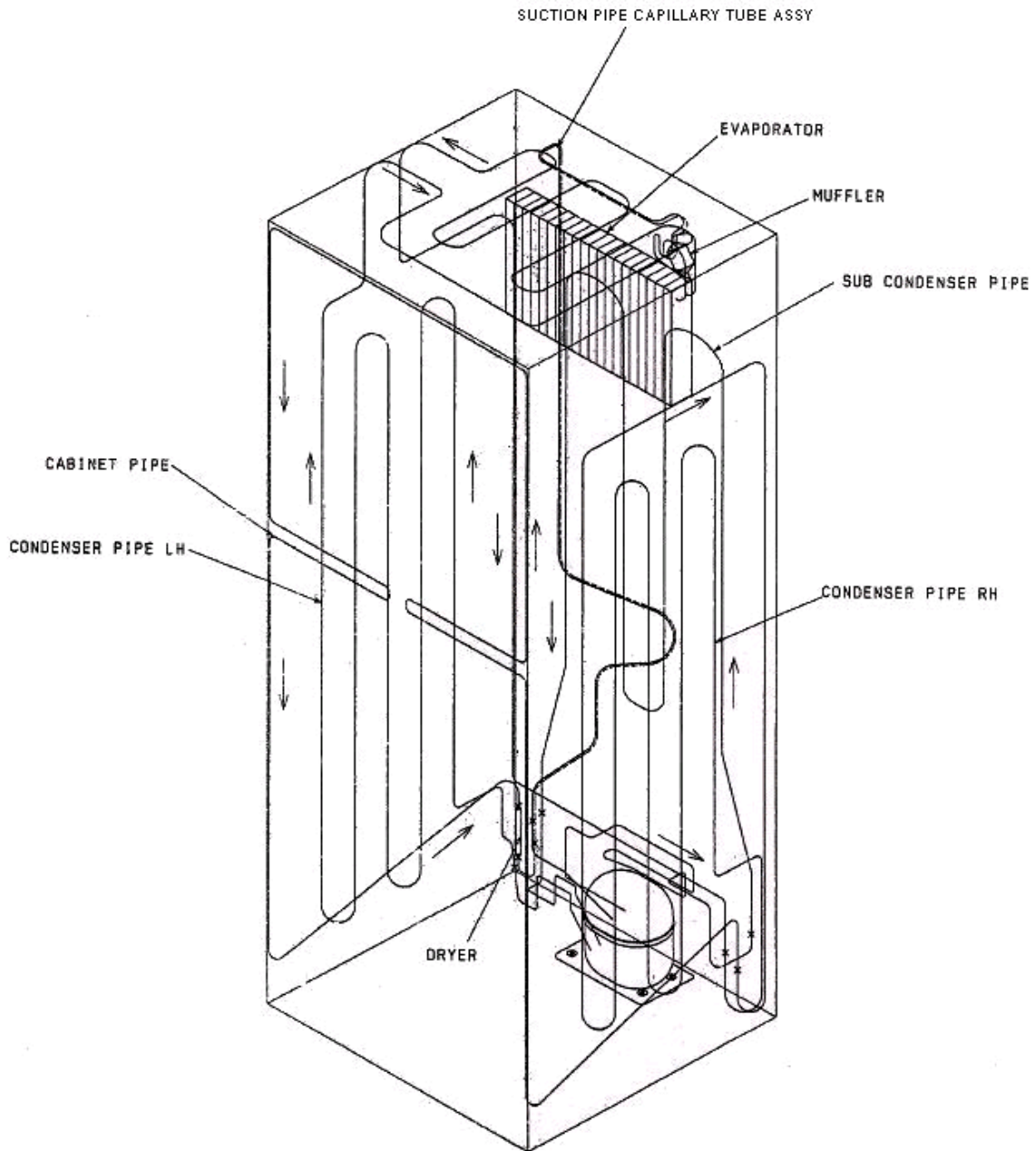
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REFRIGERANT CIRCUIT

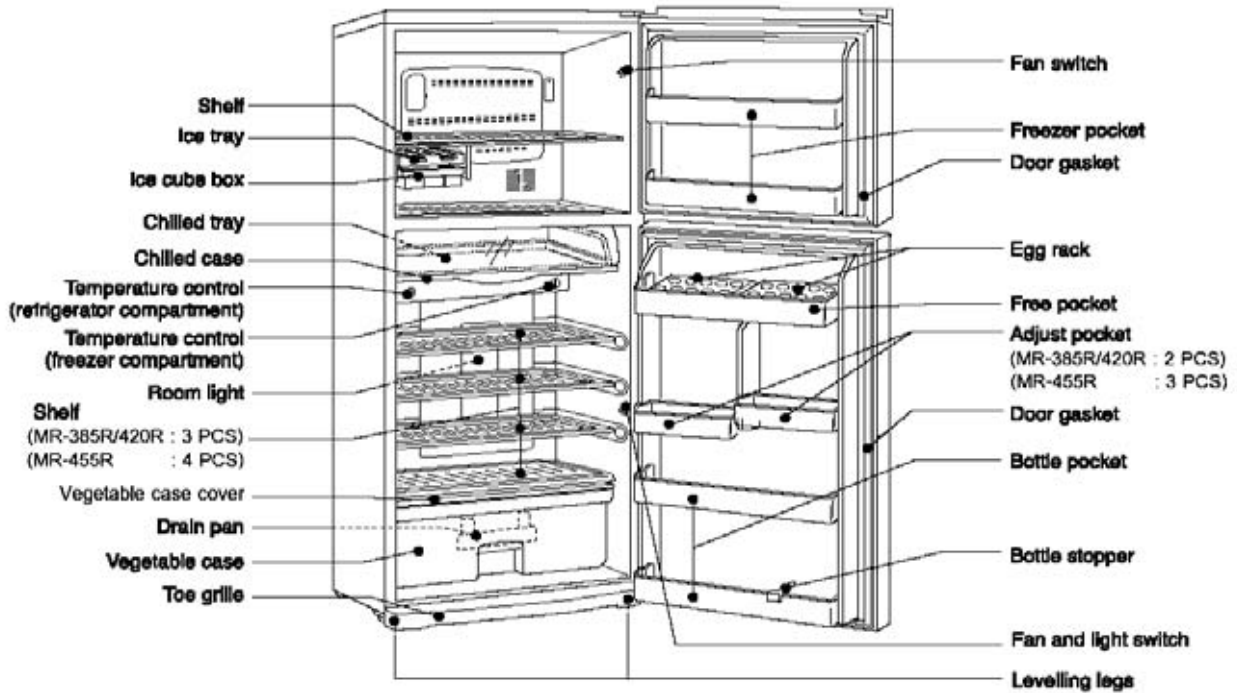
MR-385R-A MR-420R-A
MR-385R-A(NZ) MR-420R-A(NZ)



MR-455R-A
MR-455R-A(NZ)



MR-385R-A
 MR-385R-A(NZ)
 MR-420R-A
 MR-420R-A(NZ)
 MR-455R-A
 MR-455R-A(NZ)

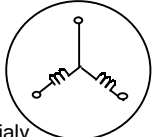
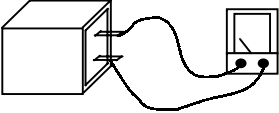
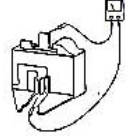
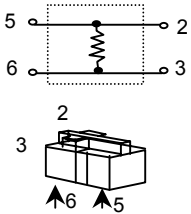


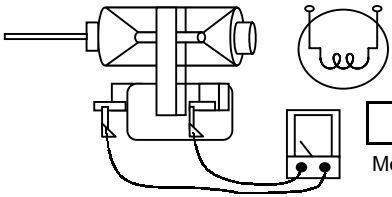
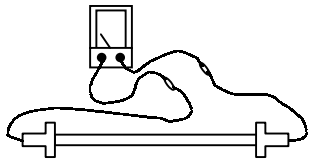
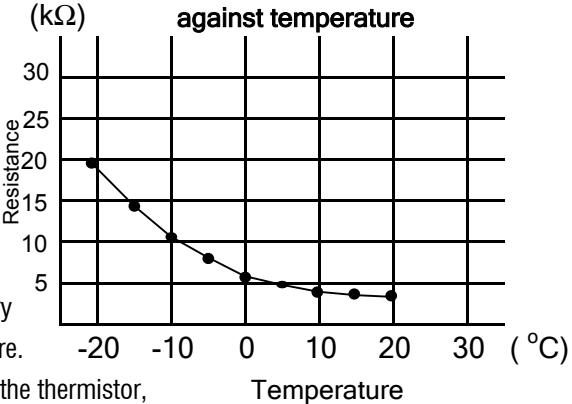
6

TROUBLE SHOOTING

6.1 TROUBLE CRITERION OF MAIN PARTS

MR-385R-A MR-420R-A MR-455R-A
 MR-385R-A(NZ) MR-420R-A(NZ) MR-455R-A(NZ)

Components/ Part Name	Check Method and Criterion	Parts Mounted Position																																	
Compressor	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th>MR-385R</th> <th>MR-420R,455R</th> </tr> </thead> <tbody> <tr> <td colspan="2">Model</td> <td>DG57C96RAW5</td> <td>DG66C11RAW5</td> </tr> <tr> <td>Rated input</td> <td>W</td> <td>106/108(220/240V 50Hz)</td> <td>117/118(220/240V 50Hz)</td> </tr> <tr> <td>Starting current</td> <td>A</td> <td>7.38/8.01(220/240V 50Hz)</td> <td>8.05/8.83(220/240V 50Hz)</td> </tr> <tr> <td>Running current</td> <td>A</td> <td>0.57/0.55(220/240V 50Hz)</td> <td>0.71/0.66(220/240V 50Hz)</td> </tr> </tbody> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Normal</th> <th rowspan="2">Abnormal (faulty)</th> </tr> <tr> <th>MR-385R</th> <th>MR-420R,455R</th> </tr> </thead> <tbody> <tr> <td>Main wiring</td> <td>18.2 Ω (Approx.)</td> <td>15.4 Ω (Approx.)</td> <td rowspan="2">Opened(∞ Ω) RU Short (0Ω)</td> </tr> <tr> <td>Auxilliary wiring</td> <td>17.7 Ω (Approx.)</td> <td>17.7 Ω (Approx.)</td> </tr> </tbody> </table>  <p>Auxiliary wiring Main wiring</p> <p>Measure the resistance with a tester. (Ambient temperature:Room temperature 15°C ~ 25°C)</p>			MR-385R	MR-420R,455R	Model		DG57C96RAW5	DG66C11RAW5	Rated input	W	106/108(220/240V 50Hz)	117/118(220/240V 50Hz)	Starting current	A	7.38/8.01(220/240V 50Hz)	8.05/8.83(220/240V 50Hz)	Running current	A	0.57/0.55(220/240V 50Hz)	0.71/0.66(220/240V 50Hz)		Normal		Abnormal (faulty)	MR-385R	MR-420R,455R	Main wiring	18.2 Ω (Approx.)	15.4 Ω (Approx.)	Opened(∞ Ω) RU Short (0Ω)	Auxilliary wiring	17.7 Ω (Approx.)	17.7 Ω (Approx.)	Compressor in the machine chamber at the rear side of the frame
		MR-385R	MR-420R,455R																																
Model		DG57C96RAW5	DG66C11RAW5																																
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	Normal		Abnormal (faulty)																																
	MR-385R	MR-420R,455R																																	
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Auxilliary wiring	17.7 Ω (Approx.)	17.7 Ω (Approx.)																																	
Run capacitor	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Rated input</td> <td>400VAC</td> </tr> </table> <p>Measure the resistance with a tester.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Normal</th> <th>abnormal(faulty)</th> </tr> </thead> <tbody> <tr> <td>Opened (∞Ω)</td> <td>Short (0Ω)</td> </tr> </tbody> </table>	Rated input	400VAC	Normal	abnormal(faulty)	Opened (∞Ω)	Short (0Ω)	In the control panel of the refrigerator compartment																											
Rated input	400VAC																																		
Normal	abnormal(faulty)																																		
Opened (∞Ω)	Short (0Ω)																																		
Motor protector	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th>MR-385R</th> <th>MR-420R,455R</th> </tr> </thead> <tbody> <tr> <td colspan="2">Model</td> <td>5TM181NHBYY</td> <td>5TM205NHBYY</td> </tr> <tr> <td rowspan="2">Connected Point</td> <td>Open</td> <td>120 ± 5° C</td> <td>120 ± 5° C</td> </tr> <tr> <td>Close</td> <td>69 ± 9° C</td> <td>69 ± 9° C</td> </tr> </tbody> </table> <p>Measure the resistance with a tester.(Ambient temperature:Room temperature 15°C ~ 25°C)</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Normal</th> <th>abnormal(faulty)</th> </tr> </thead> <tbody> <tr> <td>Less than 1Ω</td> <td>Opened (∞Ω)</td> </tr> </tbody> </table>			MR-385R	MR-420R,455R	Model		5TM181NHBYY	5TM205NHBYY	Connected Point	Open	120 ± 5° C	120 ± 5° C	Close	69 ± 9° C	69 ± 9° C	Normal	abnormal(faulty)	Less than 1Ω	Opened (∞Ω)	Compressor in the machine chamber at the rear side of the frame														
		MR-385R	MR-420R,455R																																
Model		5TM181NHBYY	5TM205NHBYY																																
Connected Point	Open	120 ± 5° C	120 ± 5° C																																
	Close	69 ± 9° C	69 ± 9° C																																
Normal	abnormal(faulty)																																		
Less than 1Ω	Opened (∞Ω)																																		
PTC RELAY	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Model</td> <td>PTH7M330MD2</td> </tr> </table> <p>Measure the resistance with a tester. (Ambient temperature:Room temperature 15°C ~ 25°C)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Normal</th> <th>abnormal(faulty)</th> </tr> </thead> <tbody> <tr> <td>33 Ω (Approx.)</td> <td>Opened (∞Ω) or Short (0Ω)</td> </tr> </tbody> </table> <p>As PTC Relay has been heated while refrigerator is running be sure to measure the resistance after the thermistor has got cool enough.</p>	Model	PTH7M330MD2	Normal	abnormal(faulty)	33 Ω (Approx.)	Opened (∞Ω) or Short (0Ω)	Compressor in the machine chamber at the rear side of the frame																											
Model	PTH7M330MD2																																		
Normal	abnormal(faulty)																																		
33 Ω (Approx.)	Opened (∞Ω) or Short (0Ω)																																		

Components/ Part Name	Check Method and Criterion	Parts Mounted Position																				
Refrigerator fan motor	 <table border="1" data-bbox="683 432 1168 472"> <tr> <td>Model</td> <td>UDVH15MA1H</td> </tr> </table> <p>Measure the resistance with a tester. (Ambient temperature: Room temperature 15°C ~ 25°C)</p> <table border="1" data-bbox="683 595 1206 719"> <tr> <td>Normal</td> <td>abnormal(faulty)</td> </tr> <tr> <td>560± 10% (Ω)</td> <td>Short (0Ω)</td> </tr> </table>	Model	UDVH15MA1H	Normal	abnormal(faulty)	560± 10% (Ω)	Short (0Ω)	Fan grill of the freezer compartment.														
Model	UDVH15MA1H																					
Normal	abnormal(faulty)																					
560± 10% (Ω)	Short (0Ω)																					
Defrost Heater	 <table border="1" data-bbox="683 797 1168 909"> <tr> <td>Rated input</td> <td>150 W</td> </tr> <tr> <td>operation method</td> <td>Power ON after defrosting (14 ± 1.5°C or more)</td> </tr> </table> <p>Measure the resistance with a tester. (Ambient temperature: Room temperature 15°C ~ 25°C)</p> <table border="1" data-bbox="386 1034 1206 1146"> <tr> <td>Normal</td> <td>Abnormal (faulty)</td> </tr> <tr> <td>384Ω (Approx.)</td> <td>Opened (∞ Ω)</td> </tr> </table>	Rated input	150 W	operation method	Power ON after defrosting (14 ± 1.5°C or more)	Normal	Abnormal (faulty)	384Ω (Approx.)	Opened (∞ Ω)	In the drip tray under the evaporator of the freezer compartment												
Rated input	150 W																					
operation method	Power ON after defrosting (14 ± 1.5°C or more)																					
Normal	Abnormal (faulty)																					
384Ω (Approx.)	Opened (∞ Ω)																					
Thermistor	<ul style="list-style-type: none"> Resistance measured under the ambient temperature from -50: to +50: <ol style="list-style-type: none"> 200" to 500k"normal Out of the above rangeabnormal <p>Thermistor Check Procedure</p> <ul style="list-style-type: none"> Thermistor resistance will vary with the change of temperature. Take the temperature around the thermistor, and then measure resistance using a tester. <p>The relation of resistance and temperature is as shown on the above graph.</p> <div style="text-align: center;"> <p>Thermistor resistance against temperature</p>  <table border="1" data-bbox="625 1272 1200 1675"> <caption>Data points from the Thermistor resistance graph</caption> <thead> <tr> <th>Temperature (°C)</th> <th>Resistance (kΩ)</th> </tr> </thead> <tbody> <tr><td>-20</td><td>20</td></tr> <tr><td>-15</td><td>15</td></tr> <tr><td>-10</td><td>11</td></tr> <tr><td>-5</td><td>8</td></tr> <tr><td>0</td><td>6</td></tr> <tr><td>5</td><td>5</td></tr> <tr><td>10</td><td>4.5</td></tr> <tr><td>15</td><td>4</td></tr> <tr><td>20</td><td>3.5</td></tr> </tbody> </table> </div>	Temperature (°C)	Resistance (kΩ)	-20	20	-15	15	-10	11	-5	8	0	6	5	5	10	4.5	15	4	20	3.5	Defrost thermistors radiator of the freezer compartment. F-thermistor, control panel of the refrigerator compartment.
Temperature (°C)	Resistance (kΩ)																					
-20	20																					
-15	15																					
-10	11																					
-5	8																					
0	6																					
5	5																					
10	4.5																					
15	4																					
20	3.5																					

6.2 HOW TO CHECK P.C BOARDS

MR-385R-A MR-420R-A MR-455R-A
MR-385R-A(NZ) MR-420R-A(NZ) MR-455R-A(NZ)

(1) Precautions

Unplug unit before checking

If the controller P.C. board box is opened with the refrigerator inside cooled, dew will form on the control board, causing trouble such as poor insulation.

The following cares must be taken when servicing.

1. Be sure to unplug the power cord before servicing.
2. Wipe away droplets on the control board box with dry cloth, and dry it up before setting a new controller P.C board.

(2) How to check the controller P.C board and vicinity.

The control board box can be checked without opening the box. Measure the voltage and resistance using 8 connectors outside the box.

1. Check for 230/240V output during power on.

Make the pin No.7,9 of the 9 pins white connector as a common pin, and measure the voltage between the common pin and another pin.

Make sure that 230/240V is output

Note: The room light always has 230/240V.

2. Check for "thermistor" output during power on.

5 pins white connector

Make the pin No.1 of the 5 pin white connector as a common pin, and measure the voltage between the common pin and another pin.

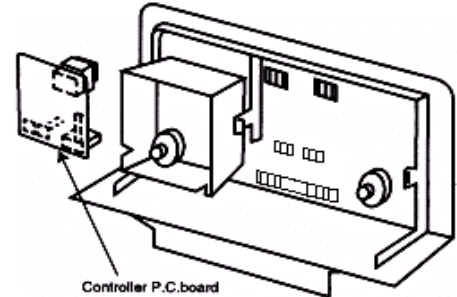
Make sure that 2-3 VDC is output.

3. Check for weak current wiring during power off

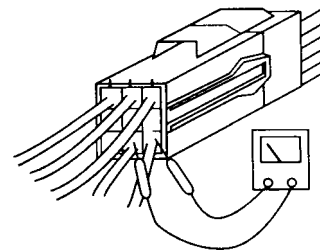
5 pins white connector

Remove the connector, and measure the resistance across -No.1 pin and No.2 pin to confirm the continuity for DEF thermistor.

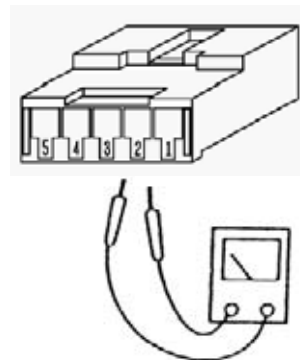
-No.1 pin and No.3 pin to confirm the continuity for the Freezer thermistor.



How to check with connectors POWER ON

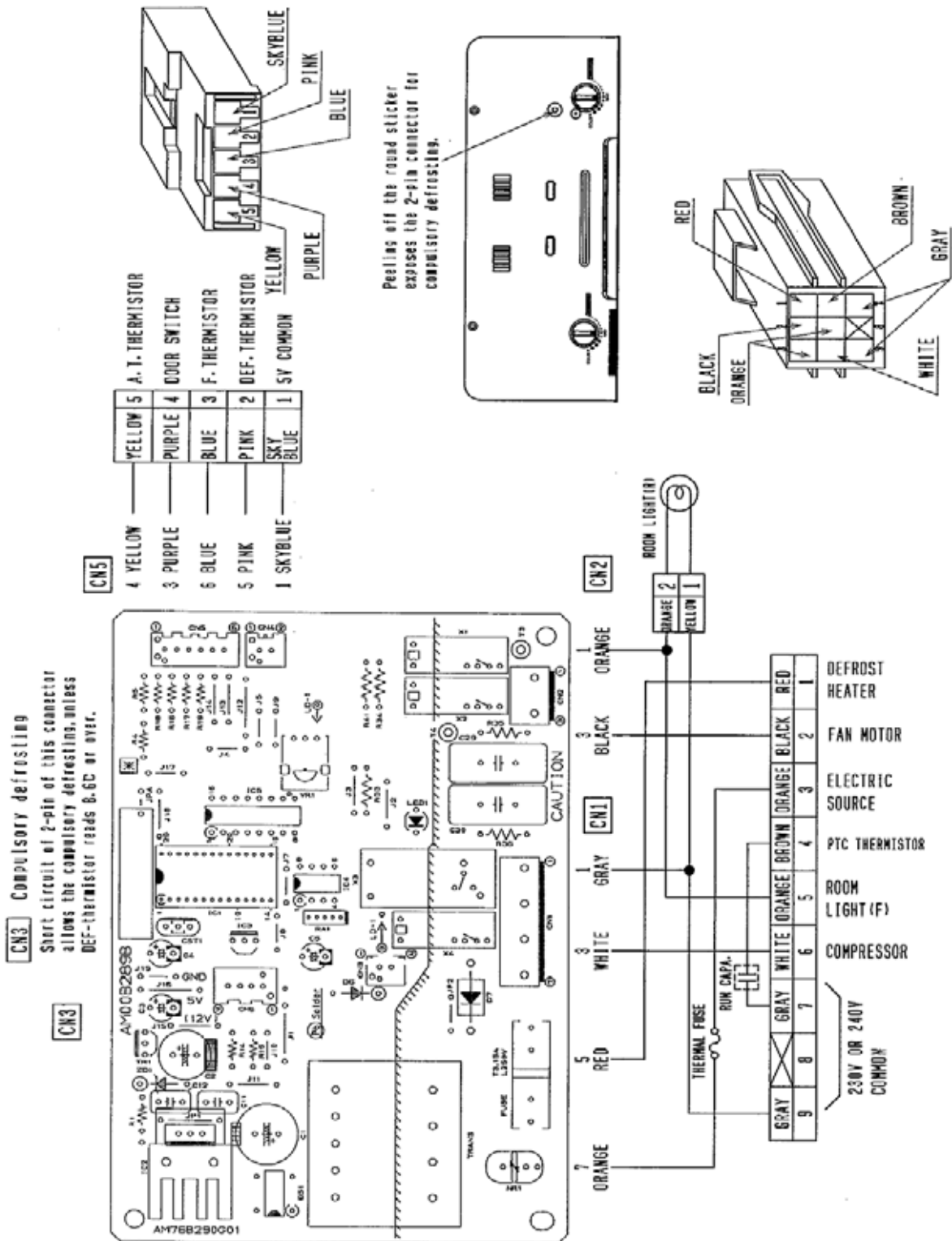


POWER OFF



6.3 TEST POINT DIAGRAM OF MAIN CONTROL BOARD

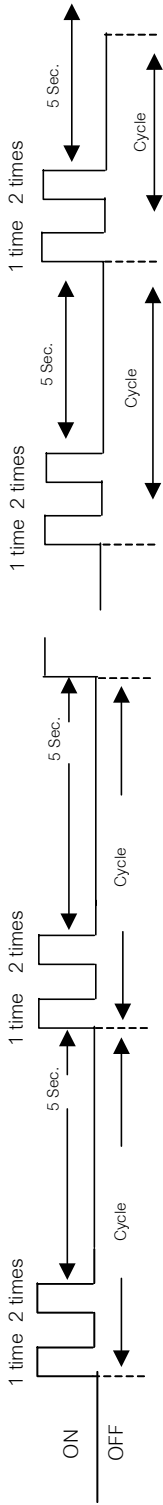
MR-385R-A MR-420R-A MR-455R-A
 MR-385R-A(NZ) MR-420R-A(NZ) MR-455R-A(NZ)



6.4 Malfunction Display and Checking points.

6.4.1) Malfunction display will use LED for show self-check

6.4.2) Fuction display



6.4.3) Repairing and check point

* A the case below , if the analysis result has malfunction over 2 points and will express in the list has more importance.

Function display	Cause	Analysis result	Check point	Corrective	Priority Repairing
LED display self - check Malfunction display Lighting mode	1 time Fault trouble of freezer thermistor	Open circuit or short circuit case	1. Check connector of control PCB CN5 , relay connector 6 pin 2. Check the resistance of thermistor	Improve in contact Change part	1
	2 times Fault trouble of defrost thermistor	Open circuit or short circuit case	1. Check connector of control PCB CN5 , relay connector 2 pin 2. Check the resistance of thermistor	Improve in contact Change part	2
	3 times Fault trouble of defrost heater	Defrost unfinished with in 2 hours	1. Check connector of control PCB CN1 , relay connector temp. fuse 2. Check the resistance of defrost heater 3. Check the resistance of temp. fuse	Improve in contact Change part Change part	3

Caution

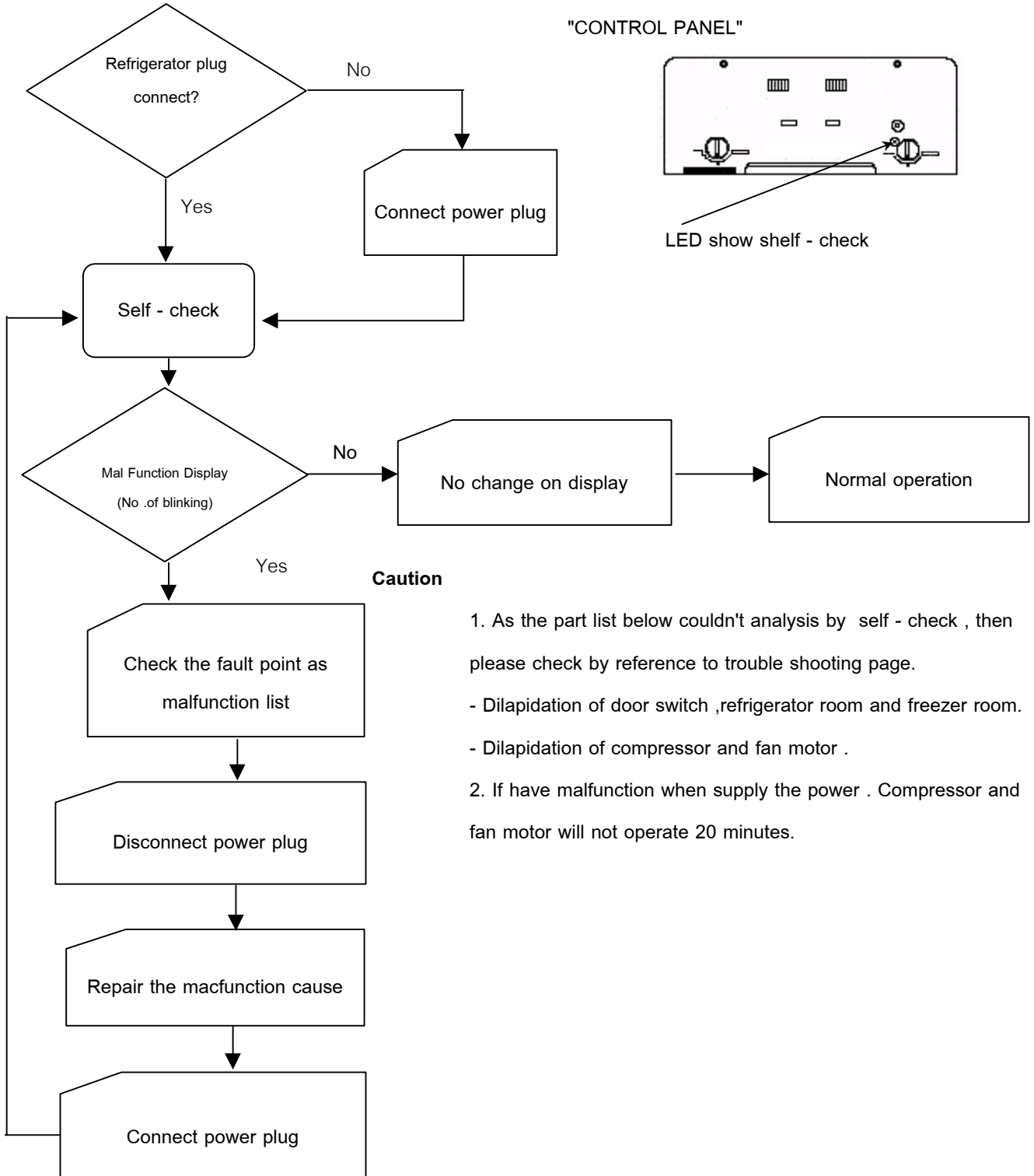
1. Before plug in the AC power , Be ensure the comp had been off more than 20 min.
2. The consider short circuit or open circuit of thermistor , resistance of open circuit is $\infty \Omega$, resistance of short circuit is 0Ω

6.5 Importance detail of fault analysis

6.5.1 Flow chart of self - check

1) Self - check monitor circuit

For show the fault condition of refrigerator and clarify point. Therefore, self - check monitor control is provided that are able to monitor No. of blinking condition with electric circuit and electric part . Before disconnect power plug please confirm LED self - check .

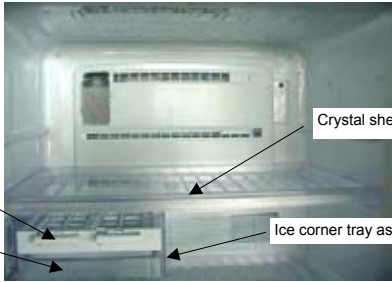
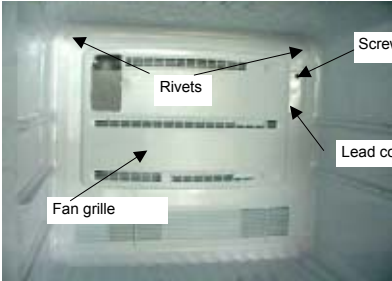
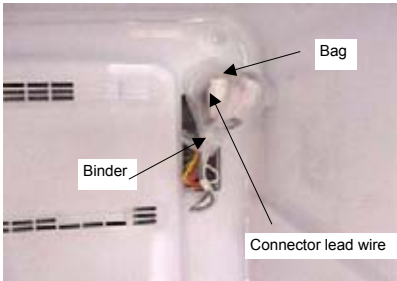
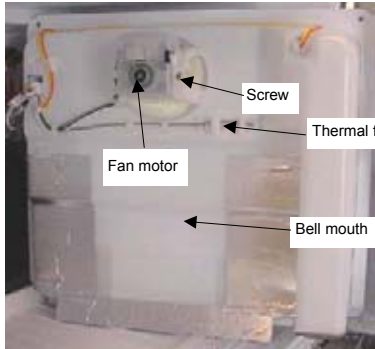
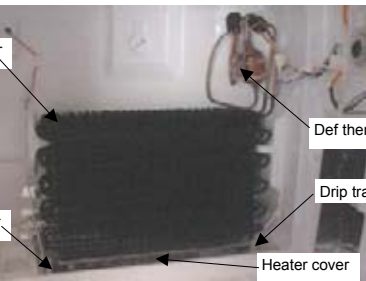


2) Interval of self check analysis

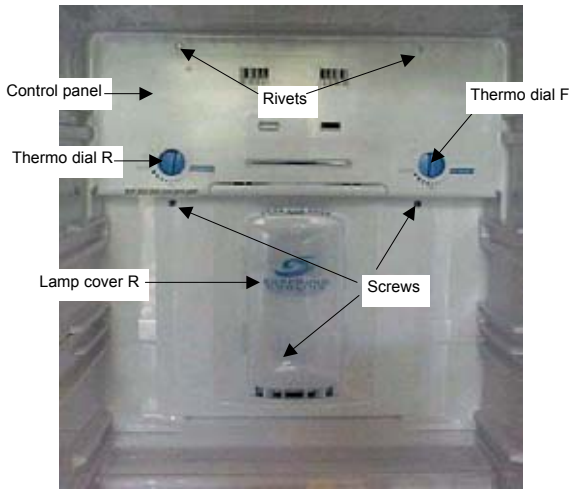
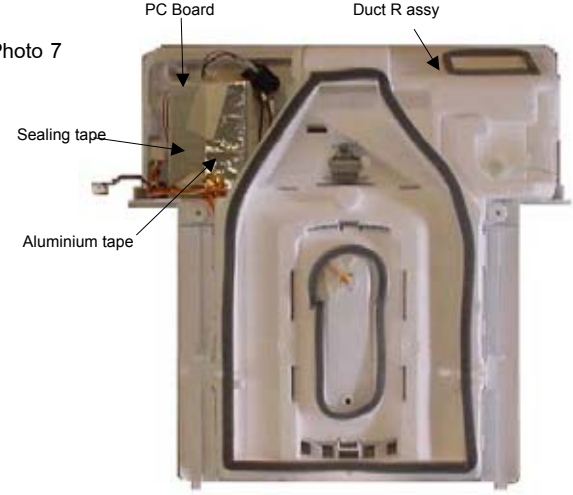
- Troubles of thermistor : will check always.
 - Trouble of defrost heater : will just analyse during defrost display only.
- (The period checking will analyse the defrost circuit after connect the plug 2 hours)

MR-385R-A MR-420R-A MR-455R-A
 MR-385R-A(NZ) MR-420R-A(NZ) MR-455R-A(NZ)

- Unplug the power cord before preparing and servicing

OPERATION PROCEDURE	PHOTO
<p>1. Remove parts insider the Freezer room</p> <p>(1) Photo 1st Remove Crystal shelf Freezer, Ice corner tray assy, Ice tray, Ice box</p> <p>Fan Grille</p> <p>(2) Photo 2nd Remove screws for closing Lead cover F, Remove 2 Rivets From Fan grille</p> <p>(3) Photo 3rd Cut binder, remove poly bag, Take off connector lead wire.</p> <p>Fan motor</p> <p>(4) Photo 4th Remove Fan motor after remove fan and remove screw out of fan motor base.</p> <p>Defrost thermal fuse and Freezer thermistor</p> <p>(5) Photo 4th Remove fan grille out of bell mouth, remove the connector and plug to take out the thermal fuse and thermistor freezer.</p> <p>Defrost heater and Drip tray</p> <p>(6) Photo 5th Lift up evaporator and remove the defrost heater out of base after remove heater cover plate and drip tray</p> <p>Caution on assembly</p> <p>(7) 1. Insert the fan into the base of fan motor's shaft, check if the fan rotates with your finger.</p> <p>2. When inserted drip tray to effect to slacken the lead wire of defrost heater in order to prevent water from entering the glass tube.</p> <p>3. Attach defrost thermistor with muffler and lighten the binder.</p>	<p>Photo 1</p>  <p>Crystal shelf F Ice tray Ice box Ice corner tray assy</p> <p>Photo 2</p>  <p>Rivets Screw Fan grille Lead cover F</p> <p>Photo 3</p>  <p>Bag Binder Connector lead wire</p> <p>Photo 4</p>  <p>Screw Thermal fuse Fan motor Bell mouth</p> <p>Photo 5</p>  <p>Evaporator Def thermistor Drip tray Defrost heater Heater cover</p>



OPERATION PROCEDURE	PHOTO
<p>2. Remove parts inside the refrigerator</p> <p>(1) Remove chilled case door and slide chilled case , remove crystal shelf of refrigerator room , remove the control panel (Photo 6)</p> <p>(2) Remove lamp cover R (Photo 6)</p> <p>(3) Remove screw and rivet , pull the control panel with to right refrigerator wall. (Photo 6)</p> <p>(4) Pick the aluminium tape and sealing tape, remove PC Board (Photo 7)</p> <p>(5) Remove duct R assy, damper thermo is installed within it. (Photo 7)</p> <p>Remove the screw of damper thermo</p> <p>Caution on assembly</p> <p>1. Be sure to use new sealing materials and tape for assembly.</p> <p>2. Attach the sealing material of refcon assy and attach the aluminium tape everytimes for protective moisture.</p>	<p>Photo 6</p>  <p>Photo 7</p> 

OPERATING PROCEDURE

3. Removing the compressor

(1) Detach the drain pan.

Compressor

(2) Collect gas from the charge pipe on the high pressure side.

(3) After collecting gas, cut the charge pipe on the low pressure side.

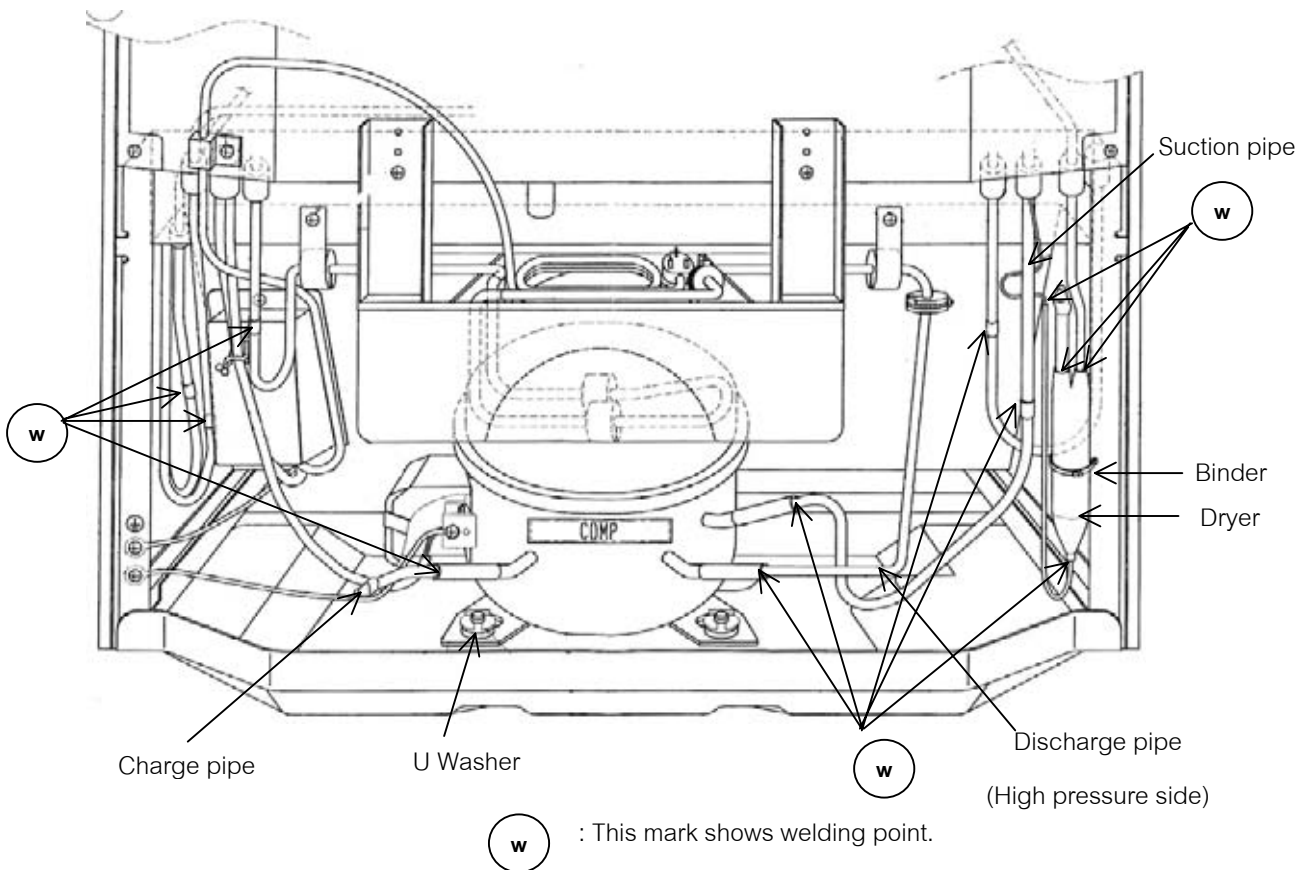
(4) Detach the welded section of the discharge pipe and suction pipe

(5) Replace the compressor and the dryer at a time. (The dryer should be the one packed with the compressor.)

CAUTION ON ASSEMBLY

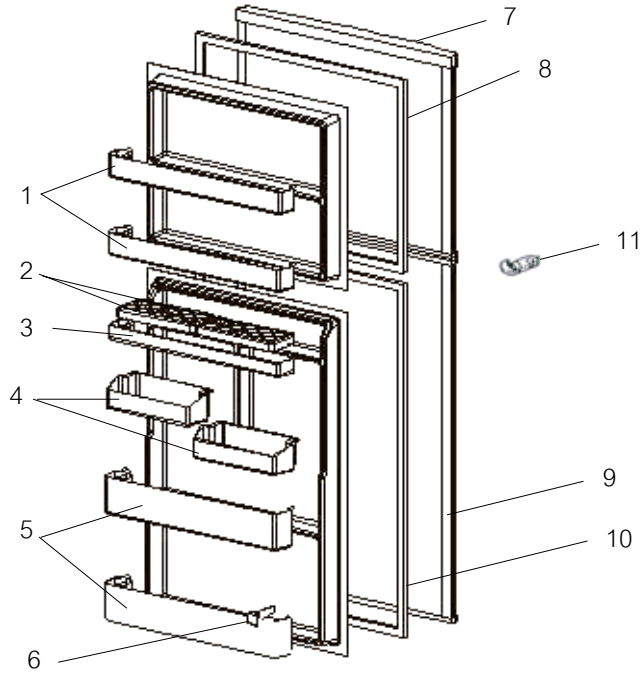
After replacement check cooling operation and check the weld for gas leaking.

Fig<MR-385R,420R,455R>

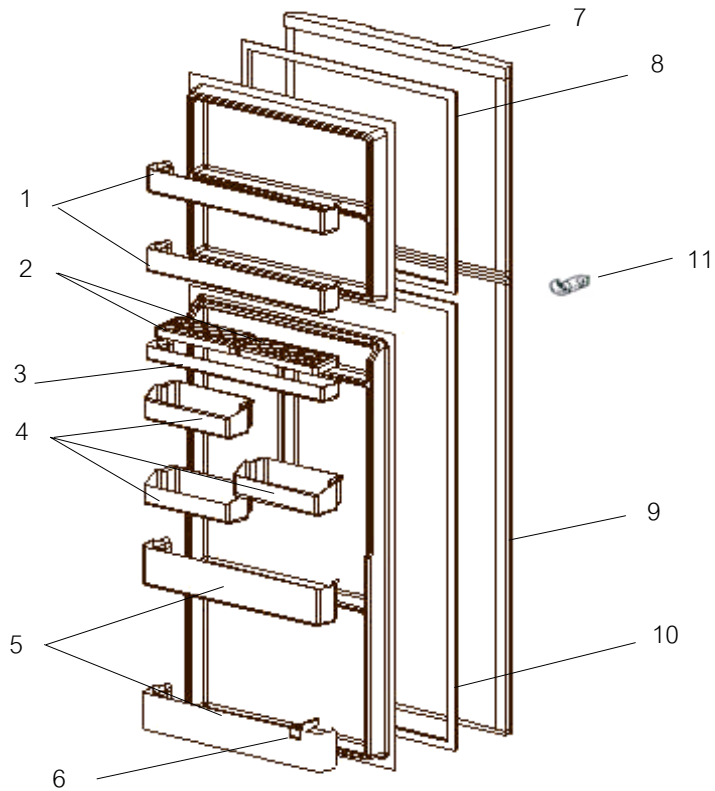


DOOR, BODY PARTS

MR-385R-A
 MR-385R-A(NZ)
 MR-420R-A
 MR-420R-A(NZ)



MR-455R-A
 MR-455R-A(NZ)



NO.	PART NO.	PART NAME	SPEC	Q'TY/UNIT												PRICE	
				385R				420R				455R					
				A		A(NZ)		A		A(NZ)		A		A(NZ)			
				W	ST	W	ST	W	ST	W	ST	W	ST	W	ST		
1	KIEJ62131	FREEZER POCKET		2	2	2	2	2	2	2	2	2	2	2	2	2	
2	KIE401115	EGG RACK		2	2	2	2	2	2	2	2	2	2	2	2	2	
3	KIEJ62118	FREE POCKET		1	1	1	1	1	1	1	1	1	1	1	1	1	
4	KIEJ62159	ADJUST POCKET		2	2	2	2	2	2	2	2	2	3	3	3	3	
5	KIEJ62124	BOTTLE POCKET		2	2	2	2	2	2	2	2	2	2	2	2	2	
6	KIEH88143	BOTTLE STOPPER		1	1	1	1	1	1	1	1	1	1	1	1	1	
7	KIEJ81001	DOOR F		1		1		1		1		1		1			
	KIEJ82001				1		1		1		1		1		1		
8	KIEH79111	MAGNET GASKET ASSY (F)		1	1	1	1	1	1	1	1	1	1	1	1	1	
9	KIEJ81000	DOOR R		1		1											
	KIEJ82000				1		1										
	KIEJ83000							1		1							
	KIEJ84000								1		1						
	KIEJ85000												1		1		
	KIEJ86000													1		1	
10	KIEH79110	MAGNET GASKET ASSY (R)		1	1	1	1										
	KIEH82110							1	1	1	1						
	KIEH85110												1	1	1	1	
11	KIEG05741	CATCHER		1	1	1	1	1	1	1	1	1	1	1	1	1	
12	KIEJ81011	HANDLE COVER R		1		1		1		1		1		1			
	KIEJ82011				1		1		1		1		1		1		
13	KIEJ81010	HANDLE BODY		1		1		1		1		1		1			
	KIEJ82010				1		1		1		1		1		1		
14	KIEJ79031	BADGE ASSY		1	1	1	1	1	1	1	1	1	1	1	1	1	

RECOMMEND PART NO. 7, 8, 9, 10

ABBREVIATION

F	FREEZER ROOM
R	REFRIGERATOR ROOM

ENCIRCLED PART NUMBER ARE NOT SHOWN IN THE FIGURES.

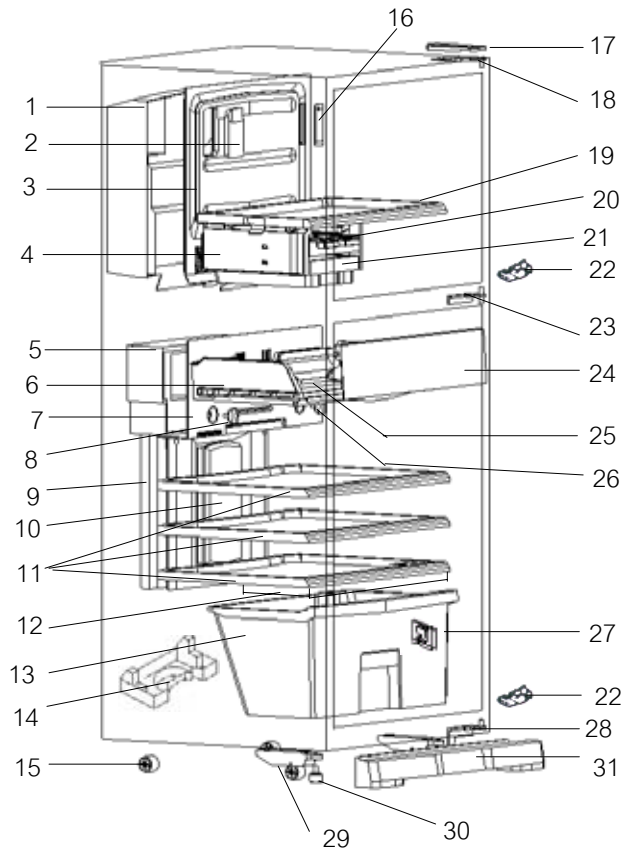
ACCESSORY PARTS

MR-385R-A

MR-385R-A(NZ)

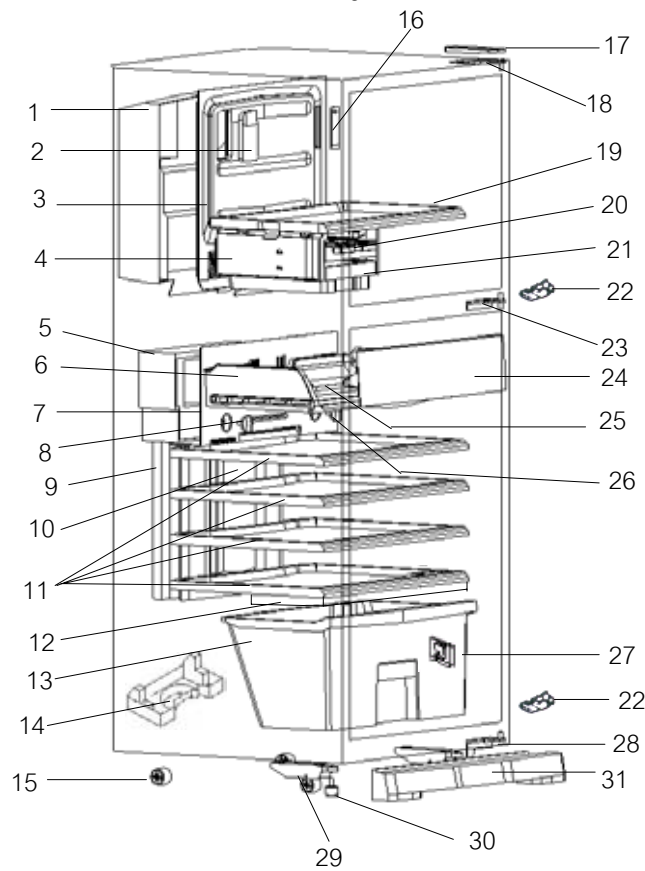
MR-420R-A

MR-420R-A(NZ)



MR-455R-A

MR-455R-A(NZ)



NO.	PART NO.	PART NAME	SPEC	Q'TY/UNIT												PRICE
				385R				420R				455R				
				A		A(NZ)		A		A(NZ)		A		A(NZ)		
				W	ST	W	ST	W	ST	W	ST	W	ST	W	ST	
1	KIEH79662	BELL MOUTH		1	1	1	1	1	1	1	1	1	1	1	1	
2	KIEJ81473	LAMP COVER (F)		1	1	1	1	1	1	1	1	1	1	1	1	
3	KIEH79663	FAN GRILLE		1	1	1	1	1	1	1	1	1	1	1	1	
4	KIEH79450	ICE CORNER ASSY		1	1	1	1	1	1	1	1	1	1	1	1	
5	KIEH79665	DUCT R ASSY		1	1	1	1									
	KIEH82665						1	1	1	1						
	KIEH85665										1	1	1	1		
6	KIEH79411	SLIDE CHILLED CASE		1	1	1	1	1	1	1	1	1	1	1	1	
7	KIEJ81850	CONTROL PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
8	KIEH79305	THERMO DIAL (R)		1	1	1	1	1	1	1	1					
	KIEHK4305										1	1	1	1		
9	KIEH79853	CONTROL PANEL (SUB)		1	1	1	1									
	KIEH82853						1	1	1	1						
	KIEH85853											1	1	1	1	
10	KIEJ62470	LAMP COVER (R)		1	1	1	1									
	KIEJ65470						1	1	1	1	1	1	1	1	1	
11	KIEH79420	CRYSTAL SHELF (R)		3	3	3	3	3	3	3	3	4	4	4	4	
12	KIEJ81468	TRAY V		1	1	1	1	1	1	1	1	1	1	1	1	
13	KIEJ62405	VEGETABLE CASE		1	1	1	1	1	1	1	1	1	1	1	1	
14	KIEH79435	DRAIN PAN		1	1	1	1	1	1	1	1	1	1	1	1	
15	KIE805794	CASTER SET		2	2	2	2	2	2	2	2	2	2	2	2	
16	KIEH79326	LEAD COVER F		1	1	1	1	1	1	1	1	1	1	1	1	
17	KIEJ81705	HINGE COVER		1		1		1				1		1		
	KIEJ82705				1		1		1		1		1		1	
18	KIEJ81701	HINGE ASSY (UPPER)		1	1	1	1	1	1	1	1	1	1	1	1	
19	KIEH79431	CRYSTAL SHELF (F)		1	1	1	1	1	1	1	1	1	1	1	1	
20	KIEH79440	ICE TRAY		1	1	1	1	1	1	1	1	1	1	1	1	
21	KIEH79467	ICE BOX		1	1	1	1	1	1	1	1	1	1	1	1	
22	KIEB66746	STOPPER HINGE		2	2	2	2	2	2	2	2	2	2	2	2	
23	KIEE94703	HINGE ASSY (MIDDLE)		1	1	1	1	1	1	1	1	1	1	1	1	
24	KIEJ62418	CHILLED CASE DOOR		1	1	1	1	1	1	1	1	1	1	1	1	
25	KIEH79416	TRAY C		1	1	1	1	1	1	1	1	1	1	1	1	
26	KIEH79315	THERMO DIAL (F)		1	1	1	1	1	1	1	1	1	1	1	1	
27	KIEH79474	VITAMIN GUARD		1	1	1	1	1	1	1	1	1	1	1	1	
28	KIEE94702	HINGE ASSY (LOWER)		1	1	1	1	1	1	1	1	1	1	1	1	
29	KIEH79795	CASTER ASSY		2	2	2	2	2	2	2	2	2	2	2	2	
30	KIEC02460	ADJUST BOLT		2	2	2	2	2	2	2	2	2	2	2	2	
31	KIEJ81730	KICK PLATE		1		1		1				1		1		
	KIEJ82730				1		1		1		1		1		1	

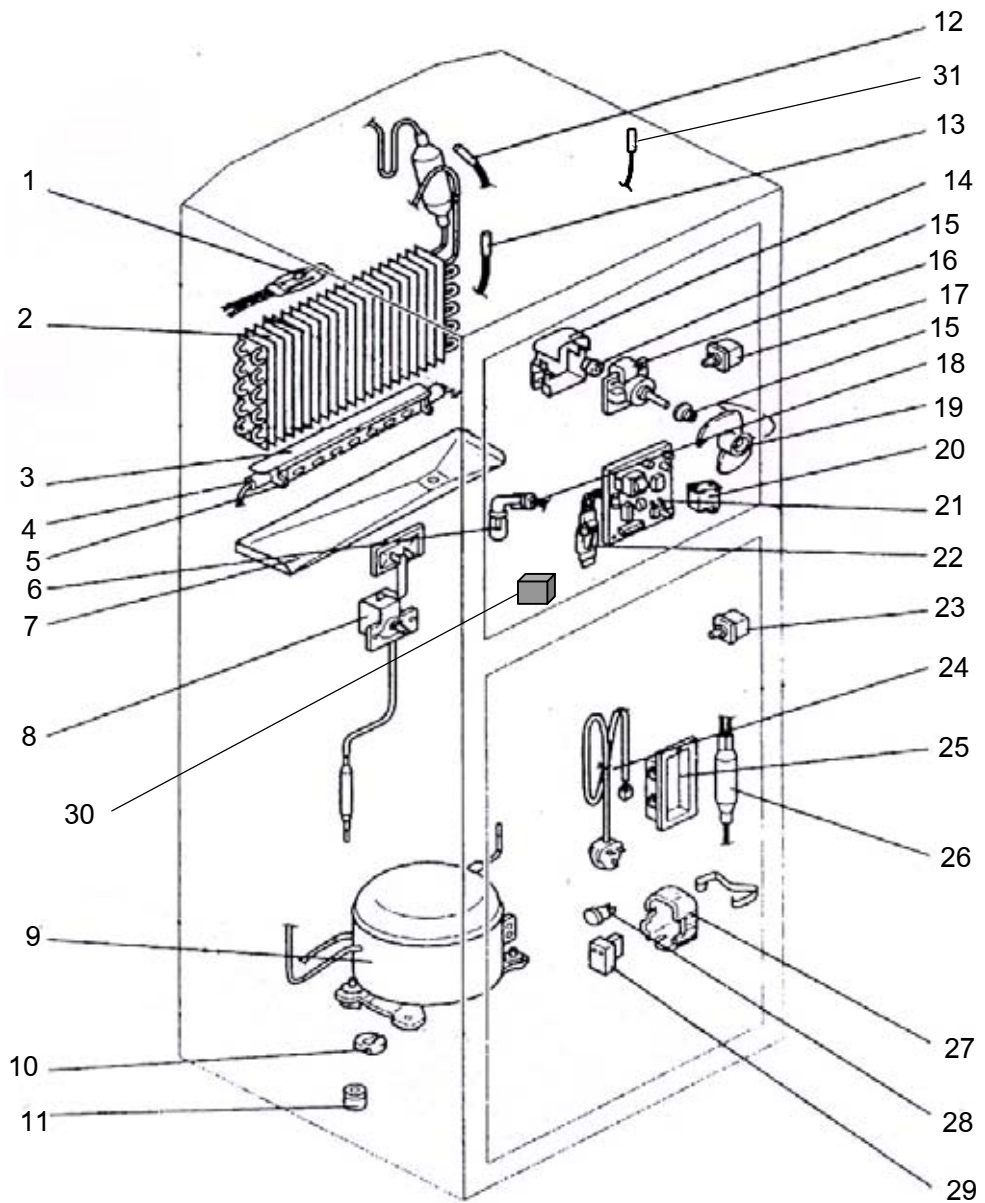
RECOMMEND PART NO. 2, 3, 4, 5, 6, 11, 13, 19, 20, 21, 24, 25

ABBREVIATION

F	FREEZER ROOM	V	BETWEEN REFRIGERATOR ROOM AND VEGETABLE ROOM
R	REFRIGERATOR ROOM		

ELECTRICIAL PARTS AND UNIT PARTS

- MR-385R-A
- MR-385R-A(NZ)
- MR-420R-A
- MR-420R-A(NZ)
- MR-455R-A
- MR-455R-A(NZ)



NO.	PART NO.	PART NAME	SPEC	Q'TY/UNIT												PRICE
				385R				420R				455R				
				A		A(NZ)		A		A(NZ)		A		A(NZ)		
				W	ST	W	ST	W	ST	W	ST	W	ST	W	ST	
1	KIEH79336	THERMAL FUSE (DEF)		1	1	1	1	1	1	1	1	1	1	1	1	
2	KIEH85995	EVAPORATOR		1	1	1	1	1	1	1	1	1	1	1	1	
3	KIEH79537	HEATER ROOF		1	1	1	1	1	1	1	1	1	1	1	1	
4	KIEHM2392	DEFROST HEATER ASSY	240V, 150W NOT DEODORIZER	1	1	1	1	1	1	1	1	1	1	1	1	
5	KIEB66397	HEATER COVER		1	1	1	1	1	1	1	1	1	1	1	1	
6	KIE402360	LAMP	E17 240V I5W	1	1	1	1	1	1	1	1	1	1	1	1	
7	KIEH79538	DRIP TRAY		1	1	1	1	1	1	1	1	1	1	1	1	
8	KIEH79301	DAMPER THERMO	MM1-6177	1	1	1	1	1	1	1	1	1	1	1	1	
9	KIEJ81277	COMPRESSOR	DG57C96RAW5	1	1	1	1									
	KIEJ82277		DG66C11RAW5					1	1	1	1	1	1	1	1	
10	KIE902735	U WASHER		3	3	3	3	3	3	3	3	3	3	3	3	
11	KIEE76797	RUBBER MOUNT		4	4	4	4	4	4	4	4	4	4	4	4	
12	KIEH79312	THERMISTOR (DEF)		1	1	1	1	1	1	1	1	1	1	1	1	
13	KIEH79378	THERMISTOR (F)		1	1	1	1	1	1	1	1	1	1	1	1	
14	KIEH79323	MOTOR ATTACH		1	1	1	1	1	1	1	1	1	1	1	1	
15	KIE401329	FAN MOTOR BUSH		2	2	2	2	2	2	2	2	2	2	2	2	
16	KIEC02320	FAN MOTOR	UDVH15MA1H	1	1	1	1	1	1	1	1	1	1	1	1	
17	KIECD4362	FAN SWITCH		1	1	1	1	1	1	1	1	1	1	1	1	
18	KIEHD2386	LAMP SOCKET(R)		1	1	1	1	1	1	1	1	1	1	1	1	
19	KIEG01321	FAN		1	1	1	1	1	1	1	1	1	1	1	1	
20	KIEA53346	RUNNING CAPACITOR	4 µF, 400VAC	1	1	1	1	1	1	1	1	1	1	1	1	
21	KIEJ81339	REFCON ASSY		1	1	1	1	1	1	1	1	1	1	1	1	
22	KIEH82336	THERMAL FUSE		1	1	1	1	1	1	1	1	1	1	1	1	
23	KIEH79363	LAMP SWITCH (R)		1	1	1	1	1	1	1	1	1	1	1	1	
24	KIEJ81354	PLUG CORD ASSY		1	1	1	1	1	1	1	1	1	1	1	1	
25	KIEJ81807	CONNECTOR BOX		1	1	1	1	1	1	1	1	1	1	1	1	
26	KIEAA1980	DRYER	4AXH-9,10GR	1	1	1	1	1	1	1	1	1	1	1	1	
27	KIEG05341	PROTECTOR COVER		1	1	1	1	1	1	1	1	1	1	1	1	
28	KIEJ62340	MOTOR PROTECTOR	5TM181NHBY	1	1	1	1									
	KIEJ83340		5TM205NHBY					1	1	1	1	1	1	1	1	
29	KIEE76330	PTC RELAY	PTH7MM330MD2	1	1	1	1	1	1	1	1	1	1	1	1	
30	KIEH61399	FILTER		1	1	1	1	1	1	1	1	1	1	1	1	
31	KIEHJ3311	THERMITOR (A.T.)		1	1	1	1	1	1	1	1	1	1	1	1	

RECOMMEND PART NO. 1, 6, 9, 10, 13, 14, 22, 23, 27, 29, 30

ABBREVIATION

F	FREEZER ROOM	DEF	DEFROST
R	REFRIGERATOR ROOM		

PACKING PART

MR-385R-A

MR-385R-A(NZ)

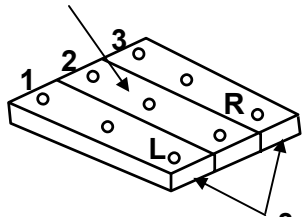
MR-420R-A

MR-420R-A(NZ)

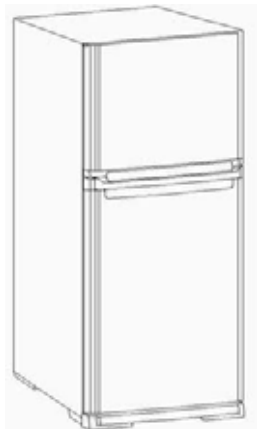
MR-455R-A

MR-455R-A(NZ)

3
TOP CUSHION MID



2
TOP CUSHION

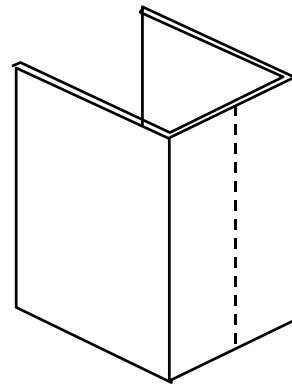
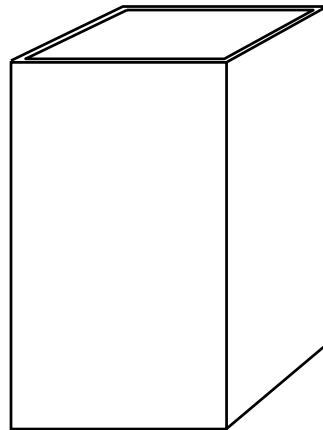


REFRIGERATOR

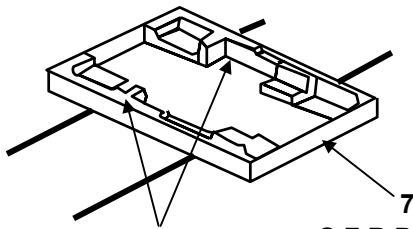


8
C.F.B TOP COVER

1
C.F.B BOX ASSY

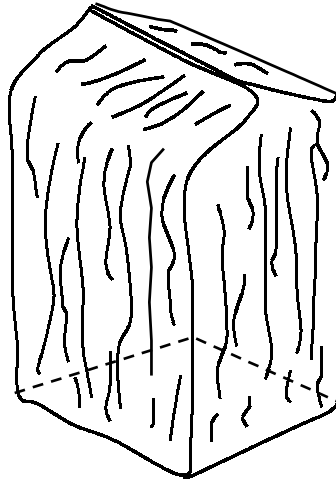


5
SIDE CUSHION ASSY



6
BOTTOM CUSHION

7
C.F.B PALLET



4
PACKING COVER

NO.	PART NO.	PART NAME	SPEC	Q'TY/UNIT												PRICE				
				385R				420R				455R								
				A		A(NZ)		A		A(NZ)		A		A(NZ)						
				W	ST	W	ST	W	ST	W	ST	W	ST	W	ST					
1	KIEJ81970	C.F.B BOX ASSY		1																
	KIEJ82970				1															
	KIEJ83970						1													
	KIEJ84970							1												
	KIEJ85970											1								
	KIEJ86970												1							
	KIEJL4970				1															
	KIEJL5970					1														
	KIEJL6970								1											
	KIEJL7970										1									
	KIEJL8970													1						
	KIEJL9970																1			
	2		KIEJ81979	TOP CUSHION		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	KIEH79972	TOP CUSHION MID		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
4	KIEG55973	PACKING COVER		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
5	KIEJ81971	SIDE CUSHION ASSY		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
6	KIEH79978	BOTTOM CUSHION		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
7	KIEH79974	C.F.B PALLET		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
8	KIEH79975	C.F.B TOP COVER		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		



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